

A Descriptive Study to Assess the Knowledge on Puberty Changes During Adolescence Among the Adolescent Girls Studying in Selected Schools of District Ludhiana, Punjab

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ABSTRACT

Background: Adolescent girls need to have suitable knowledge about puberty and its effects, marriage and conception which would equip them for their multiple roles as housewives, mothers of the new society. Purpose: The aim of the study was to assess the level of knowledge regarding puberty changes among adolescent girls. Material and Method: A detailed research approach was used for this study 100 adolescent girls were selected by Purposive sampling technique. Data were collected in the month of May, 2017 through self-structured questionnaire tool after taking formal written permission from principals of selected schools and also informed consent from selected adolescent girls was taken. The data were evaluated by using descriptive and inferential statistics. Findings: The result of study demonstrate that majority 82% of adolescent girls had average level of knowledge regarding puberty changes followed by 13% of adolescent girls had good knowledge and at least 5% of the adolescent girls had below normal level of knowledge regarding puberty changes. Interpretation and Conclusion: The finding of the study concluded that the educational interventions are needed to provide accurate and authentic knowledge about reproductive health, related crucial issues is needed to allow them to make correlated to decision of life and also process of puberty that unfolds for everyone and what change to expect.

Keywords: adolescents, assess, knowledge, puberty

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INTRODUCTION

Puberty is a delightful time of awe and discovery. In a young girl life, it is the stage of life when girls sexual maturity. This is the time when adolescents experience a change in their physical, social and emotional aspect of life which can cause tension and confusion but on other hand it may give sense on happiness but all of these feelings are perfectly normal. In order of effectively deal with this transition, they require information and clear picture of their bodily change to prevent them from physical problem guilt, ambiguity and confusion [1].

An adolescent is 'to emerge' or 'achieve identity'. So, adolescence is also defined as a phase of life characterized by rapid physical growth and development, social and psychological changes and maturity, sexual maturity, experimentation, development of adult mental process and a move from the earlier childhood socioeconomic dependence toward relative independence. The average onset of puberty is at 10 for girls and 12 for boys. These changes give rise to mood swings, which both teenage boys and girls experience. In addition to a myriad of feelings, children have a lot of questions

and doubts about who they are and what they are experiencing, thanks to the active hormones taking control of their body and emotions [2].

The physical modification of puberty is induced by hormones, chemical portion in the body that acts on particular organs and tissues. In boys a major change incurred during puberty is the increased production of testosterone i.e. male sex hormones, while in girls there is increased production of the estrogen i.e. female sex hormone. In both sexes, a rise in growth hormone produces the adolescent growth spurt, the pronounced occur at widely ages like boys, girls also start to grow hair in places where they never had hair before the common physical changes include accelerated growth in weight and height gain, breast changes like pigmentation of the areola and enlargement of the breast tissue and nipple, appearance of public hair and changes in vaginal secretions, activation of axillary sweat glands, appearance of axillary hairs, and onset of menstruation [3].

Girls will begin to develop breast buds as early as 8 years of age, reaching full breast development anywhere from 12 to 18 years. Pubic hair growing as well as armpit and leg hair can begin roughly at age 9 to 10. A menarche, the occurrence of menstrual periods, commonly begins about 2 years following the first sign of puberty. That age may vary as early as 10 and as late as 15 with the average. Most prominent change that occurs in adolescents is change in the height. Puberty is an age of rapid skeletal and sexual maturation that develops mainly in early adolescence. The pimples and acne in adolescent are mostly due to the increased activities of sweat and sebaceous gland and hips become more round [4].

The biological transition of adolescence or puberty is possibly the most noticeable

sign that adolescence has begun. Specialized, puberty refers to the time period during which an individual gets along confident of sexual reproduction. Internally, the improvement of sexual features of teenage and also become able of sexual reproduction. Externally, as secondary development, girl begin look like mature women [5].

In girls, sexual characteristics evolved in a less regular sequence. Supplementary traits are the outcome of hormonal alteration in the body during puberty. Usually, the first sign of puberty is a slight elevation of the breasts, but sometime this is preceded by the appearance of pubic hair. Pubic hair modification from thin and flossy to heavy and grainy. Simultaneous with these changes is advance breast development. In teenage girls, internal sexual changes comprise maturation of the uterus, vagina, and other parts of the reproductive system. Menarche, the first menstrual period, occurs approximately late in puberty. Regular ovulation and the ability to carry a baby of full term usually follow menarche by several years [6].

A number of social problems appear in the period of adolescence. The social contacts of the person expand from infancy to maturity. In infancy a child's social contacts are with one person, regularly its mother. From the primeval childhood onwards the mother-child relation normally spread out as the child comes into contact with the other associate of family. During adolescent years the boy or girl tends to grow interests for groups outside the family. The youngsters commonly have unaware about the changes that are taking place in their interests. On the one hand, they feel glad in being dependent upon their parents and on the other; the experiences with their peers are also pleasant. The equal group attracts them a greater force, because it offers them respect and status which is

either deficient in the family or is not got there at all [7].

Social problems which have a root in the relationship amongst the adolescent and his parents arise because the two do not understand each other sympathetically. The parents believe in the effectiveness of greater control and path. The teenage wants more freedom but he also wants his parents to state him what to do. The parents want to give more direction and control but at the identical time need him to believe and act for himself. There is perplexity, and the contradictoriness which is not soluble and therefore it makes difficulties for both [8].

Cognitive theorist Jean Piaget explained adolescence as the stage of life in which the individual's thoughts start taking more of an abstract form and egocentric thoughts decrease. This permits an individual to think and reason with a wider perspective. Biological changes in brain structure and connectivity will interact with increased experience, knowledge, and changing social demands to produce rapid cognitive growth. These modifications generally start at puberty or concisely thereafter, and some acquisition continues to create as adolescent ages. Development of cognitive skills that support the control and coordination of thoughts and behavior, are generally associated with the prefrontal cortex area of the brain. The thoughts, ideas, and concepts developed at this period of life greatly influence one's future life and play a major role in character and personality formation [9].

Like in recent generations there has been a lot of shame around a girl's first experience of bleeding and these reactions are being passed down. The lack of adequate information, acceptance and support created an experience of anxiety and isolation. Menarche is the first

significant rite of passage girls go through in their entry into women hood. It affects their sexual, emotional psychological maturation. The experience that girls have at this time and the reaction of their mothers and other adult women in their lives has a long-term impact.

But due to lack of knowledge on puberty changes during adolescence among the adolescent girls go through the physiological and emotional stress is and malpractices. Most of girls in Indian society do not get adequate knowledge about their own body physiological changes and related to menstruation. If we are providing accurate knowledge to the adolescent girls, it will be helpful for them to adjust with these changes occurring at the time of puberty. Hence, during our community posting and based on above studies, researchers were found that preadolescent girls were lacking in knowledge regarding puberty changes and menarche. So, this is the time they need explanation about the process of puberty that unfolds for everyone and what changes to expect.

Objectives

- (1) To assess the existing knowledge on puberty changes during adolescence among adolescent girls.
- (2) To find out the association between the knowledge score of the puberty changes during adolescence with selected demographic variables such as age of adolescent girl (in years), education status, mother's education, occupation of mother, diet pattern, age of menarche (in years), average length of menstrual cycle (in days), family income/year, source of information related to health.
- (3) To develop guidelines regarding puberty changes during adolescence.

Hypothesis

H₁: There will be significant difference between knowledge score of puberty changes during the adolescence with the selected demographic variables such as age of adolescent girl, education status, mother's education, occupation of mother, diet pattern, age of menarche, average length of menstrual cycle, family income/year, source of information related to health.

H₂: There will be no significant difference between knowledge score of puberty changes during the adolescence with the selected demographic variables such as age of adolescent girl, education status, mother's education, occupation of mother, diet pattern, age of menarche, average length of menstrual cycle, family income/year, source of information related to health.

METHODOLOGY

Research Approach

A quantitative research approach was adopted to accomplish the objectives of the study that is to assess the knowledge of the adolescent girls regarding the puberty changes during adolescence residing in the selected schools of District Ludhiana Punjab.

Research Design

In present study the descriptive research designs used to achieve the stated objectives. Synchronic research method acting are used when the researcher wants to report particular behavior as it happens in the environment.

Research Setting

The present final study was conducted in selected Shaheed Kartar Singh Sarabha Senior Secondary Government school of District Ludhiana Punjab. Total 100 adolescent girls having age of 11–17 years were taken from Shaheed Kartar Singh Sarabha Senior Secondary Government

School of Sarabha. It is 1 km away from S.K.S.S. College of Nursing Sarabha.

Study Population

The accessible population for study consisted of adolescent girls studying in 6th, 7th, 8th class selected Shaheed Kartar Singh Sarabha Senior Secondary Government School of Sarabha, Ludhiana, Punjab.

Sampling Technique

Purposive sampling technique was used to select the sample for assessing the knowledge on puberty changes during adolescence among adolescent girls.

Sample

In this study, sample comprised of 100 adolescent girls residing in selected Shaheed Kartar Singh Sarabha Senior Secondary Government School Village Sarabha, District Ludhiana, Punjab.

N=100

Development and Description of Tool

Part 1 – It consists of age of the adolescent girl, education of the adolescent girl, education of the mother of the adolescent girl, occupation of the mother of the adolescent girl, diet pattern of adolescent girl, age of menarche of adolescent girl (in years), the average length of menstrual cycle, family income (in Rs), source of information related to health.

Part 2 – It consists of self -structured questionnaires regarding knowledge of puberty changes during adolescence.

Criterion Measurement

Maximum score-30

Minimum score-1

Level of knowledge	Score
Good	21–30
Average	11–20
Below average	1–10

Content Validity of Tool

The content validity of tool was determined by expert's opinion on the relevance of items. After the construction of the preliminary draft, the tool was given to experts from Obstetric and Gynecological Nursing, Child Health Nursing, Medical Surgical Nursing, Mental Health Nursing and Community Health Nursing. At time of construction of tool there were 20 items and after taking suggestions from experts it was increased in 30. So, tool was finalized with 30 items and distracters were changed according to suggestions.

Reliability of Tool

Reliability was calculated by using Karl Pearson's Formula.

$$r = 0.97$$

Data Collection Procedure

The study was conducted after the approval from dissertation committee of S.K.S.S. CON Sarabha. Written permission was taken from Principal of Shaheed Kartar Singh Sarabha Senior Secondary Government School Village Sarabha, District Ludhiana to conduct study. Written consent was also taken from adolescent girls and they were free to participate in the study according to their willingness. Confidentiality of information was maintained by researchers. Data was collected in the month of May, 2017 by using self-structured questionnaire tool. Then data was analyzed according to structured objectives.

Plan of Data Analysis

The analysis of data was done in accordance with objectives by using descriptive and inferential statistics i.e. mean, standard deviation, t-test, ANOVA test.

RESULTS AND DISCUSSION

Objective 1: To Assess the Existing Knowledge on Puberty Changes During Adolescence Among Adolescent Girls

According to this, majority of adolescent girls (82%) had average level of knowledge regarding puberty changes followed by 13% of adolescent girls had good knowledge and only 5% of adolescent girls had below average level of knowledge regarding puberty changes. Hence, it was concluded that maximum of adolescent girls had average level of knowledge regarding puberty changes among adolescent girls.

Objective 2: To Find Out the Association Between the Knowledge Score of the Puberty Changes During Adolescence With Selected Demographic Variables Among Adolescent Girls

- According to age of adolescent girl (in years) highest mean knowledge score 16.69 was found with in age group of 12–14 years, followed by 16.28 with in age group of 31–35 years and least 14.67 in age group of <11 years. On the basis of ANOVA test, the tabulated value for df (2/97) is 3.15 and the calculated value 'F' was 1.3968. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it was concluded that age of adolescent girl had no impact on the knowledge regarding puberty changes among adolescent girls.
- According to educational status of adolescent girl, highest mean knowledge score of educational status 16.58 was found within 9–10 standard followed by 16.22 within 7–8 standard and least 14.67 within 5–6 standard. On the basis of ANOVA test, the tabulated value for df (2/97) is 3.15 and the calculated value 'F' was

0.9069. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it can be concluded that education of adolescent girl had no impact on knowledge regarding puberty changes among adolescent girls.

- According to educational status of mother of adolescent girl, highest mean knowledge score of education of mother of adolescent girl 16.85 were found in illiterate, followed by 15.83 in middle pass, 16.42 in secondary and senior secondary and least 0 in graduation/above. On the basis of ANOVA test, the tabulated value for df (2/97) is 3.15 and the calculated value 'F' was 0.6505. The calculated value was less than the tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research is rejected and null hypothesis accepted. Thus, it can be concluded that education of mother had no impact on the knowledge regarding puberty change among adolescent girls.
- According to occupation of mother of adolescent girl, highest mean knowledge score of occupation of adolescent girl 17.18 was found in the nonworking mothers, followed by 16.17 in working mother. On the basis of ANOVA test, the tabulated value for df (2/97) is 3.15 and the calculated value 'F' was 0.5605. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it can be calculated that occupation of mother had no impact on the knowledge regarding puberty changes among adolescent girls.
- According to diet pattern, highest mean knowledge score of diet pattern 16.57 was found among eggetarian,

followed by 16.53 among vegetarian and least that is 14.37 among non-vegetarian diet. On the basis of ANOVA test, the tabulated value 'F' was 3.15 and the calculated value was 1.4065. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it can be concluded that dietary pattern had no impact on knowledge regarding puberty changes among adolescent girls.

- According to age of menarche, highest mean knowledge score of age of menarche 18.12 was found with in the age of >16 years followed by 17.53 with in age of 11-13 years, 15.85 with in age of 14-16 years and least that is 14.23 with in age of 8-10 years. On the basis of ANOVA test, the tabulated value for (3/96) is 2.75 and the calculated value 'F' was 4.4551. The calculated value was more than tabulated value which was found to be statistically significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it can be concluded that age of menarche of adolescent girl (in year) had impact on knowledge regarding puberty changes among adolescent girls.
- According to average length of menstrual cycle, highest mean knowledge score 17.14 had average length of menstrual cycle of >46 days, followed by 16.42 within 22-45 days and least 16.03 with in <21 days. On the basis of ANOVA test, the tabulated value for (2/97) is 3.15 and the calculated value 'F' is 0.3244. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and hypothesis is accepted. Thus, it can be concluded that the

average length of menstrual cycle had no impact on knowledge regarding puberty changes among adolescent girls.

- According to family income, highest mean knowledge score that is 17.35 was found who had their income R.s. 5001/- to 10000/- followed by 16.09 who had income <5000, 15.78 who had income >150000 and least 14.77 who had income 10001-150000/-. On the basis of ANOVA test, the tabulated value for df (3/97) is 2.76 and the calculated value F was 1.8862. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it can be concluded that family income (in R.s) had no impact on knowledge regarding puberty changes.
- According to source of information related to health, highest mean knowledge score 18.16 was found in friend as source of information related to health, followed by 16.32 in family, 15.33 in newspaper and at least 14 in mass media. On the basis of ANOVA test, the tabulated value for df (3/96) is 2.76 and the calculated value F was 0.9789. The calculated value was less than tabulated value which was found to be statistically non-significant at $p \leq 0.05$ level. Hence, research hypothesis is rejected and null hypothesis is accepted. Thus, it can be concluded that source of information related to health had no impact on knowledge regarding puberty changes among adolescent girls.

CONCLUSION

On the basis of result of data analysis, the following conclusion was reached:

- The finding of present study indicates that majority 82% of adolescent girls had average level of knowledge regarding puberty changes followed by

13% of adolescent girls had good knowledge monitored by 5% of adolescent girls had below average level of knowledge regarding puberty changes.

- The statistical significant variables were age, education status, mother's education, occupation of mother, diet pattern, age of menarche, average length of menstrual cycle, family income/year, source of information significant at $p \leq 0.05$ at level of significance.

REFERENCES

- [1] P. Dutta. *Essentials of Pediatric Nursing*. 2nd Edn., Jaypee Publications; 124–6p.
- [2] A.W. Root. Endocrinology of puberty: normal sexual maturation, *J Pediatrics*. 2008; 83: 1–19p.
- [3] Puberty. [online] Available from: URL: en.wikipedia.org/wik.
- [4] M.J. Hockenberry, D. Wilson. *Wong's Essentials of Pediatric Nursing*. Elsevier Publication; 2013: 477–8p.
- [5] Teenage growth and development. [online] Available from: URL: <http://www.pamf.org>. A.L. Romy. *J Paediatric Nurs*. 2005; 20(2): 75–82p.
- [6] S.J. Sequeira. Are adolescent girls with reproductive health information? *Nightingale Nurs Times*. 2009; 5(8): 28–30p.
- [7] Pubertal Changes in urban and rural Teenagers. The Spiritual City of India, *Ind J Youth Adol Health*. 2014; 1: 39–43p.
- [8] Ross, Wilson. *Text Book of Anatomy and Physiology*. 11th Edn., New Delhi: Elsevier Publications; 2009, 286–8p.
- [9] Knowledge about reproductive health, *Int J Res Health Sci*. 2014; 2(2): 543p.